

## REMARKS

Claims 1-18 remain for consideration. All claims are thought to be allowable over the cited art.

The allowability of claims 4, 5, 10, 11, 16 and 17 is acknowledged.

The Office Action fails to establish that claims 1-18 are unpatentable under 35 USC §103(a) over US Patent No. 5,757,909 to Park (hereinafter "Park") in view of US Patent No. 6,578,150 to Luyster (hereinafter "Luyster"). The rejection is respectfully traversed because the Office Action fails to show that all the limitations are suggested by the references, fails to provide a proper motivation for modifying the teachings of Park with teachings of Luyster, and fails to show that the combination could be made with a reasonable likelihood of success.

The designation of claims 1-18 as being rejected under §103 is thought to be a typographical error because the Office Action indicates that claims 4, 5, 10, 11, 16, and 17 are allowable and the limitations of claims 4, 5, 10, 11, 16, and 17 are not addressed in the Office Action. Therefore, no response is thought to be necessary for claims 4, 5, 10, 11, 16, and 17 relative to the Park-Luyster combination.

Claim 1 includes limitations related to decoding a keystream. The cited teachings of Park and Luyster generally reference the respective encryption and decryption techniques. There is no apparent suggestion in the cited teachings of how a keystream is decoded. Those skilled in the art will recognize that the keystream is not the input cipher text to be decoded, but rather the keystream used to decrypt the cipher text once the keystream has been decoded.

Claim 1 includes further limitations that are not shown to be suggested by the Park-Luyster combination. For example, the claimed method sets forth generating a set of test bits. The Office Action cites Luyster as teaching these limitations. However, the cited teachings of Luyster contain no apparent corresponding elements. An explanation of the specific elements of Luyster that are perceived to suggest the claimed test bits is requested if the rejection is maintained.

Claim 1 includes still further limitations of generating a set of attempted keystream bits from differences between the test bits and the cipher bits. It is respectfully submitted that the cited teachings of Park contain no apparent suggestion

that any set of bits is generated from differences between the test bits and the cipher bits. If specific elements of Park are perceived to correspond the claimed generating based on differences, then an explanation of these specific element is respectfully requested.

The limitations of claim 1 also include generating, from a current seed, a set of current keystream bits from a parallel feedback shift register. None of the cited teachings of Park or Luyster in any apparent way suggest the claimed use of a parallel feedback shift register. The rejection should be withdrawn if no specific elements of the Park-Luyster combination can be cited to suggest these limitations.

Other limitations of claim 1 further refine the limitations described above. Thus, the Office Action does not show that the Park-Luyster combination suggests all the limitations of claim 1. Claims 7 and 12 include limitations similar to those of claim 1 and are not shown to be unpatentable over the Park-Luyster combination for at least the reasons set forth above. Furthermore, the Office Action fails to allege that any of the additional limitations of claims 7 and 12 over those of claim 1 are suggested by specific teachings or correspond to specific elements of the Park-Luyster combination.

Claims 2-3, 6, 8-9, 13-16 include further limitations that refine the limitations of independent claims 1, 7, and 12 as described above. Furthermore, the claims include additional limitations that the Office Action does not address in rejecting the claims. Therefore, the Office Action fails to show or allege any teaching or suggestion of the limitations of claims 2-3, 6, 8-9, 13-16.

Claim 18 includes limitations directed to an  $n$ -bit parallel feedback shift register including  $n$  single-bit registers in an FPGA and  $n$  function generators in the FPGA. No elements of the Park-Luyster combination are alleged to suggest these limitations, and the limitations do not appear to be suggested by the combination. Thus, claim 18 is not shown to be unpatentable over the Park-Luyster combination.

The alleged motivation for combining Luyster with Park is conclusory and improper. The alleged motivation states that "it wiuld [sic] have been obvious ... to modify the teaching of Park by including the limitation detailed above as taught by Luyster because this would prevent illegal user from decoding digital keystreams." This alleged motivation is improper because no evidence is presented to suggest that

Park's approach is in any way prone to decoding of a keystream by an illegal user. Furthermore, no evidence is presented to suggest that Luyster's approach is in any way an improvement over Park's approach. Further still, the Office Action presents no evidence and it is not apparent which elements of Park are to be modified and which elements of Luyster are to be used in the modification. Without such evidence it is not apparent that the alleged modification could be achieved with a reasonable likelihood of success. Therefore, the alleged motivation is improper and should be withdrawn.

The rejection of claims 1-3, 6-9, 12-16, and 18 over the combination should be withdrawn because the Office Action fails to show all the limitations are suggested by the combination, fails to provide a proper motivation for combining the references, and fails to show that the combination could be made with a reasonable likelihood of success.

The Office Action fails to establish that claims 1, 7, and 12 are unpatentable under 35 USC §101 as claiming non-statutory subject matter. The rejection is respectfully traversed because the Office Action does not establish a *prima facie* case that the invention as a whole is directed solely to an abstract idea or to manipulation of abstract ideas or does not produce a useful result. The MPEP at §2106 II. A. provides the following guidance:

Although the courts have yet to define the terms useful, concrete, and tangible in the context of the practical application requirement for purposes of these guidelines, the following examples illustrate claimed inventions that have a practical application because they produce useful, concrete, and tangible result:

- Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held to be directed to patentable subject matter because "the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle." *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999);

- "[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *State Street*, 149

F.3d at 1373, 47 USPQ2d at 1601; and

- Claims drawn to a rasterizer for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means were held to be directed to patentable subject matter since the claims defined "a specific machine to produce a useful, concrete, and tangible result." *In re Alappat*, 33 F.3d 1526, 1544, 31 USPQ2d 1545, 1557 (Fed. Cir. 1994).

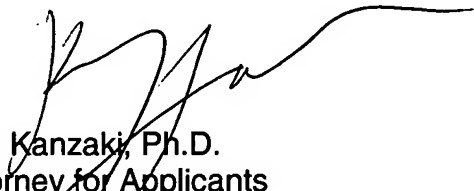
A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See *In re Warmerdam*, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also *Schrader*, 22 F.3d at 295, 30 USPQ2d at 1459. Office personnel have the burden to establish a *prima facie* case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101. Compare *Musgrave*, 431 F.2d at 893, 167 USPQ at 289; *In re Foster*, 438 F.2d 1011, 1013, 169 USPQ 99, 101 (CCPA 1971). Further, when such a rejection is made, Office personnel must expressly state how the language of the claims has been interpreted to support the rejection.

Based on the direction provided by the MPEP, the Office Action fails to present any evidence to show that the method claims 1 and 7 do not produce a useful, concrete, and tangible result. Claims 1 and 7 specifically recite use of a parallel feedback shift register in decoding a keystream. Furthermore, claim 12 recites various circuitry in combination with a parallel feedback shift register. Thus, the Office Action fails to establish a *prima facie* showing that claims 1, 7, and 12 are directed to abstract ideas. Based on the specific embodiments and the utilities of the invention disclosed in the complete specification, claims 1, 7, and 12 are thought to be directed to statutory subject matter.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Amendments and Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on March 2, 2005.

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